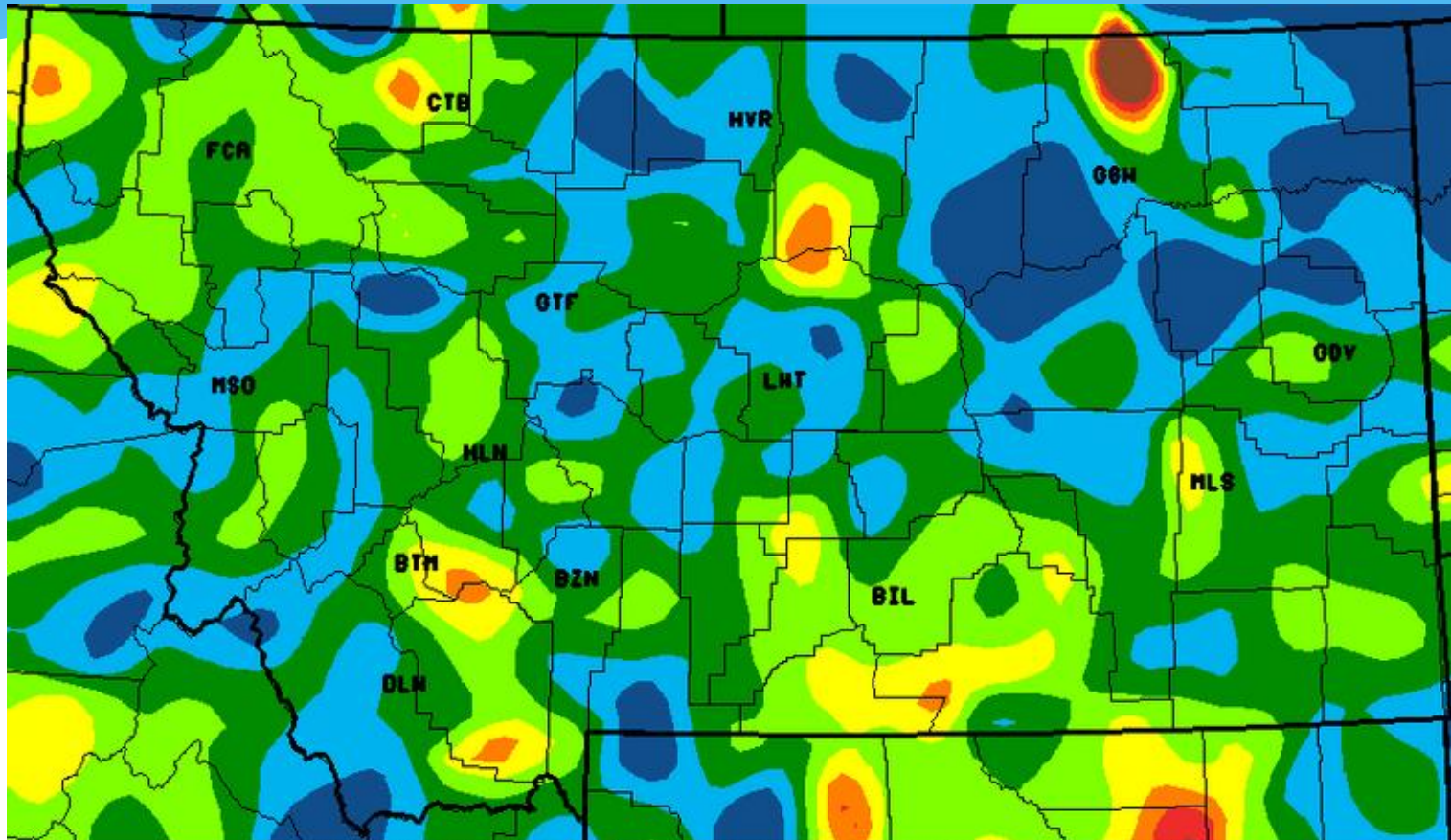


2011 Snowmelt Flooding Potential for Montana

Gina Loss – Service Hydrologist
National Weather Service
Great Falls WFO

March 18, 2011

Percent of Average Precipitation Water Year



Oct 2010-Feb 2011 Percent of Normal Precipitation

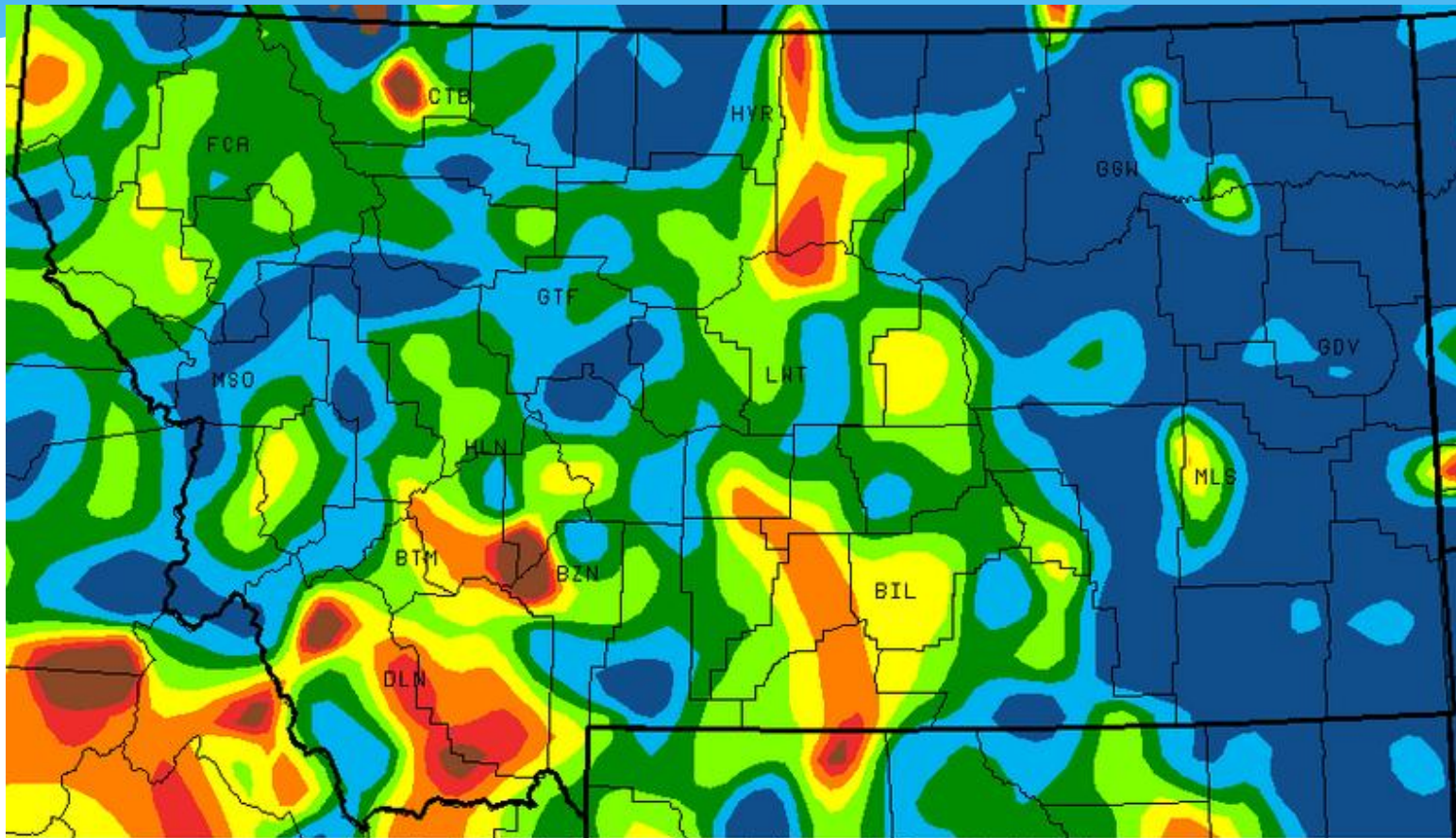
Period of Normal: 1971-2000

20 40 60 85 115 150 200

NOTE: Data used to generate this image are
PROVISIONAL AND SUBJECT TO CHANGE.

<http://www.wrh.noaa.gov/Greatfalls>

Percent of Average Precipitation Since January 1



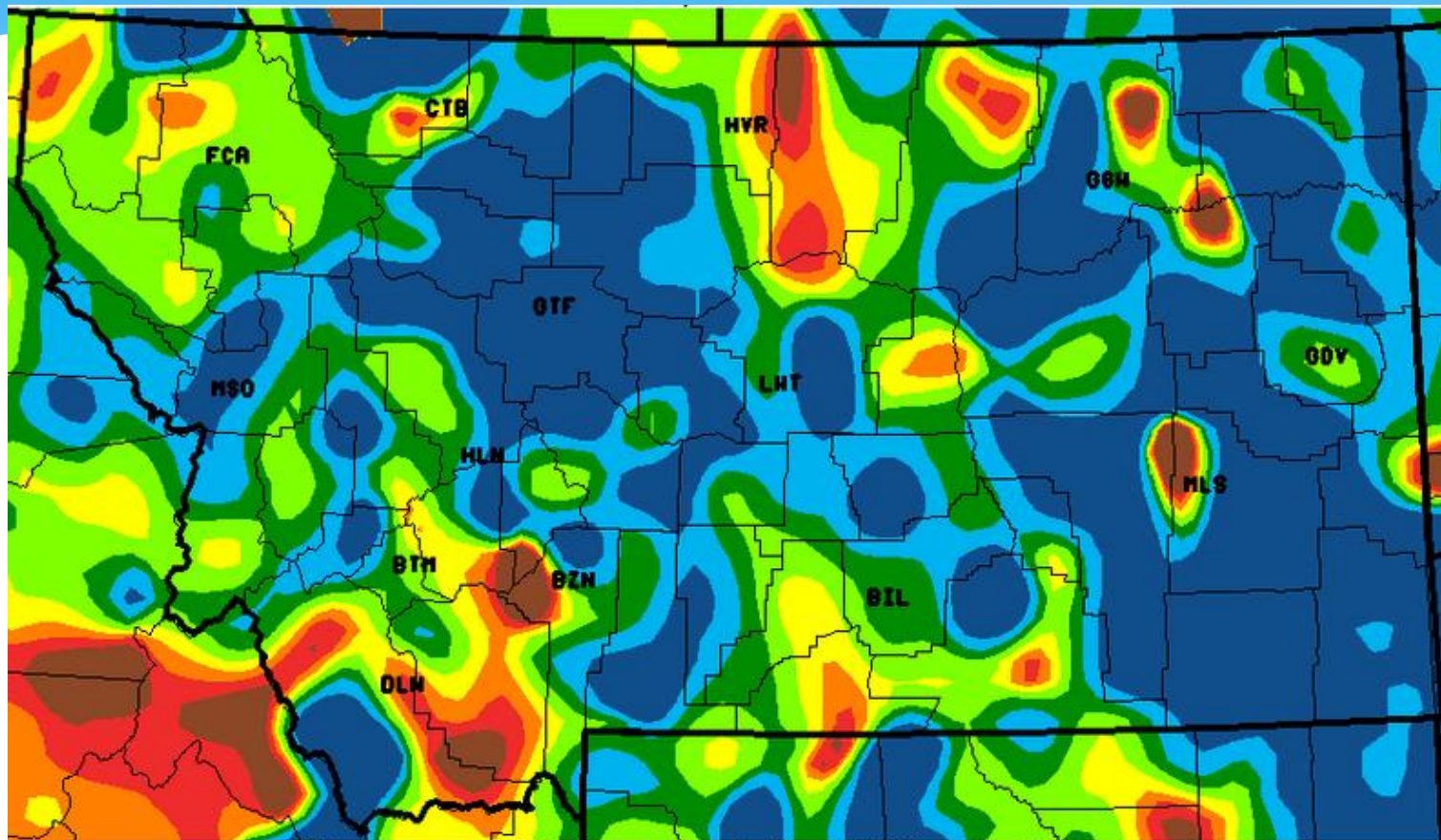
Jan-Feb 2011 Percent of Normal Precipitation
Period of Normal: 1971-2000

20 40 60 85 115 150 200

NOTE: Data used to generate this image are
PROVISIONAL AND SUBJECT TO CHANGE.

<http://www.wrh.noaa.gov/Greatfalls>

Percent of Average Precipitation February



February 2011 Percent of Normal Precipitation

Period of Normal: 1971-2000

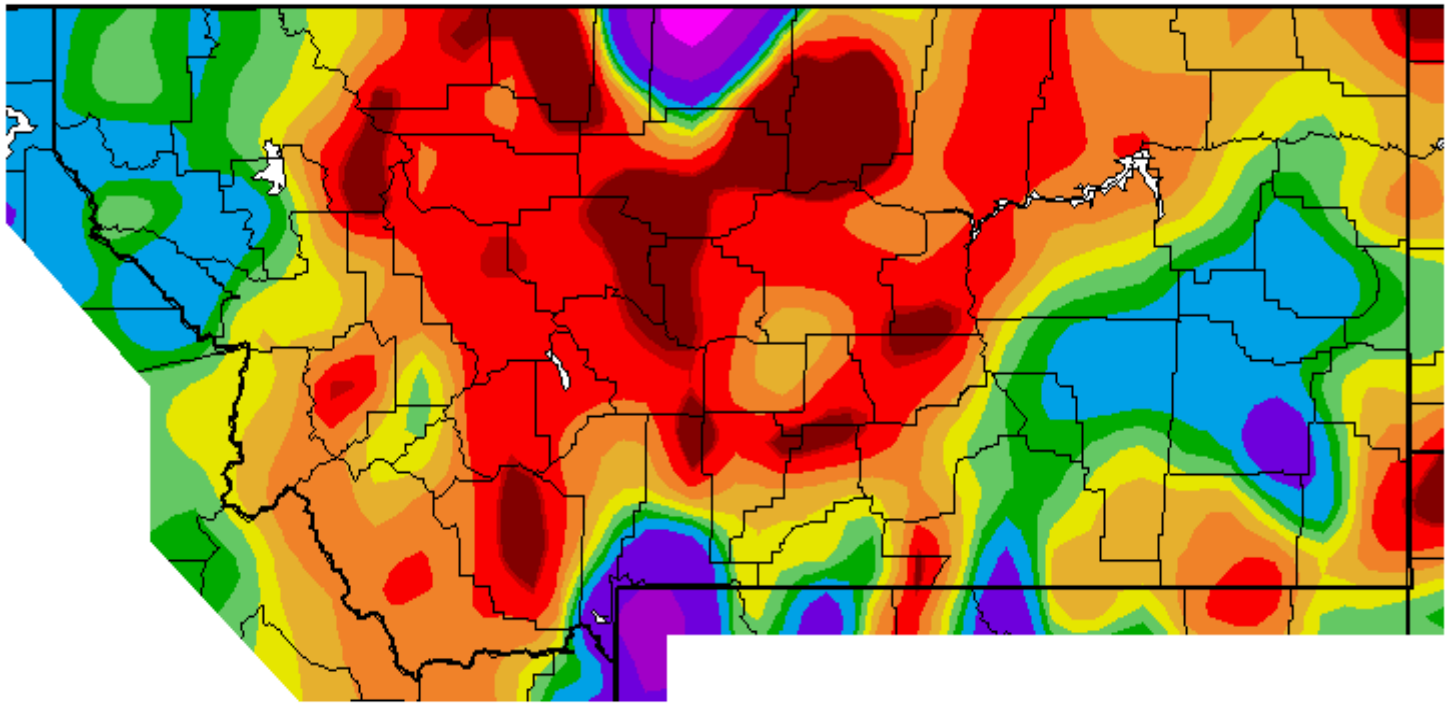
20 40 60 85 115 150 200

NOTE: Data used to generate this image are
PROVISIONAL AND SUBJECT TO CHANGE.

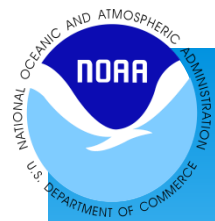
<http://www.wrh.noaa.gov/Greatfalls>

Percent of Average Precipitation

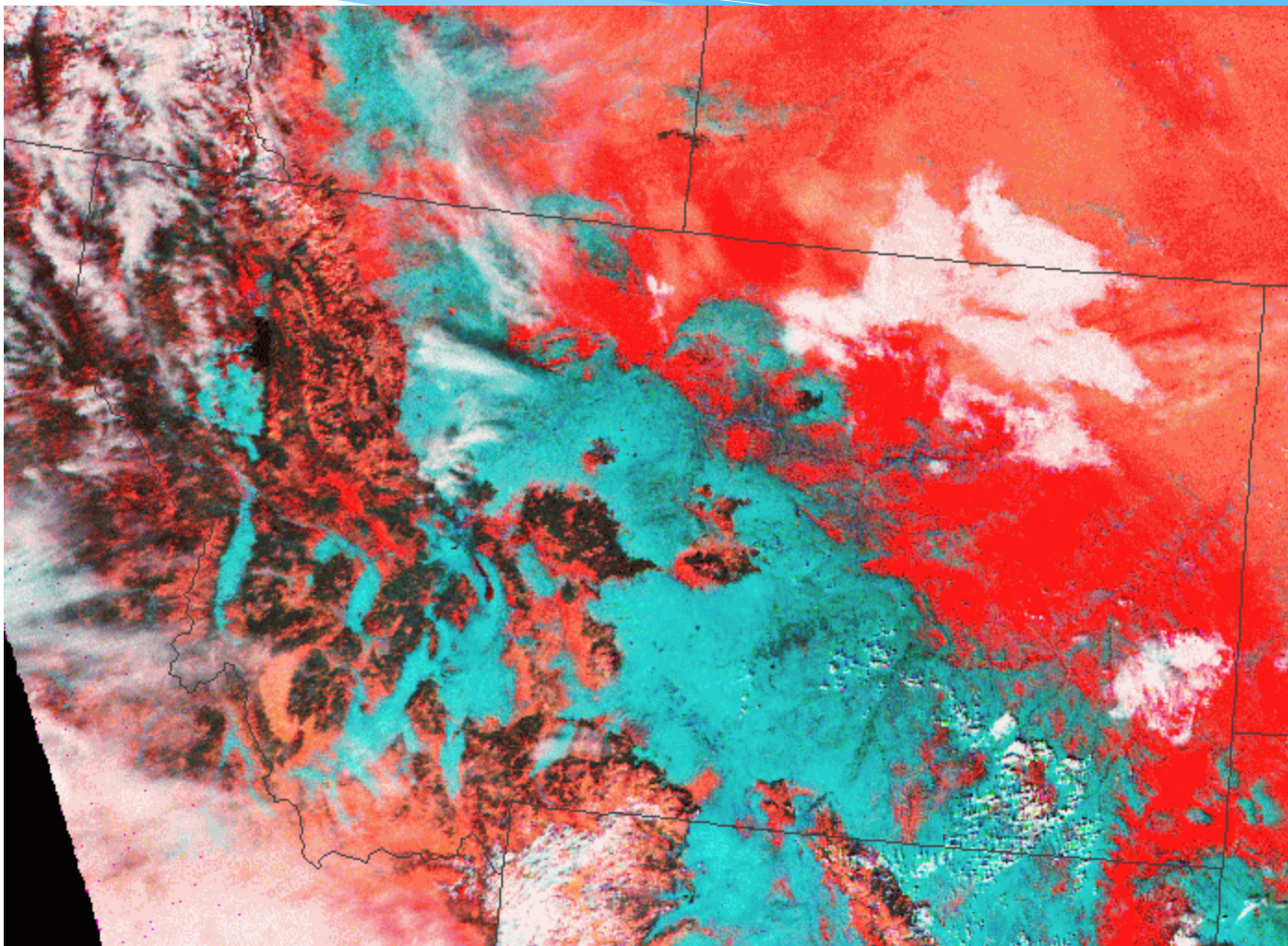
March 1-15, 2011



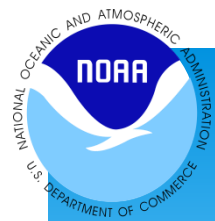
erated 3/16/2011 at WRCC using provisional data.
A Regional Climate Centers



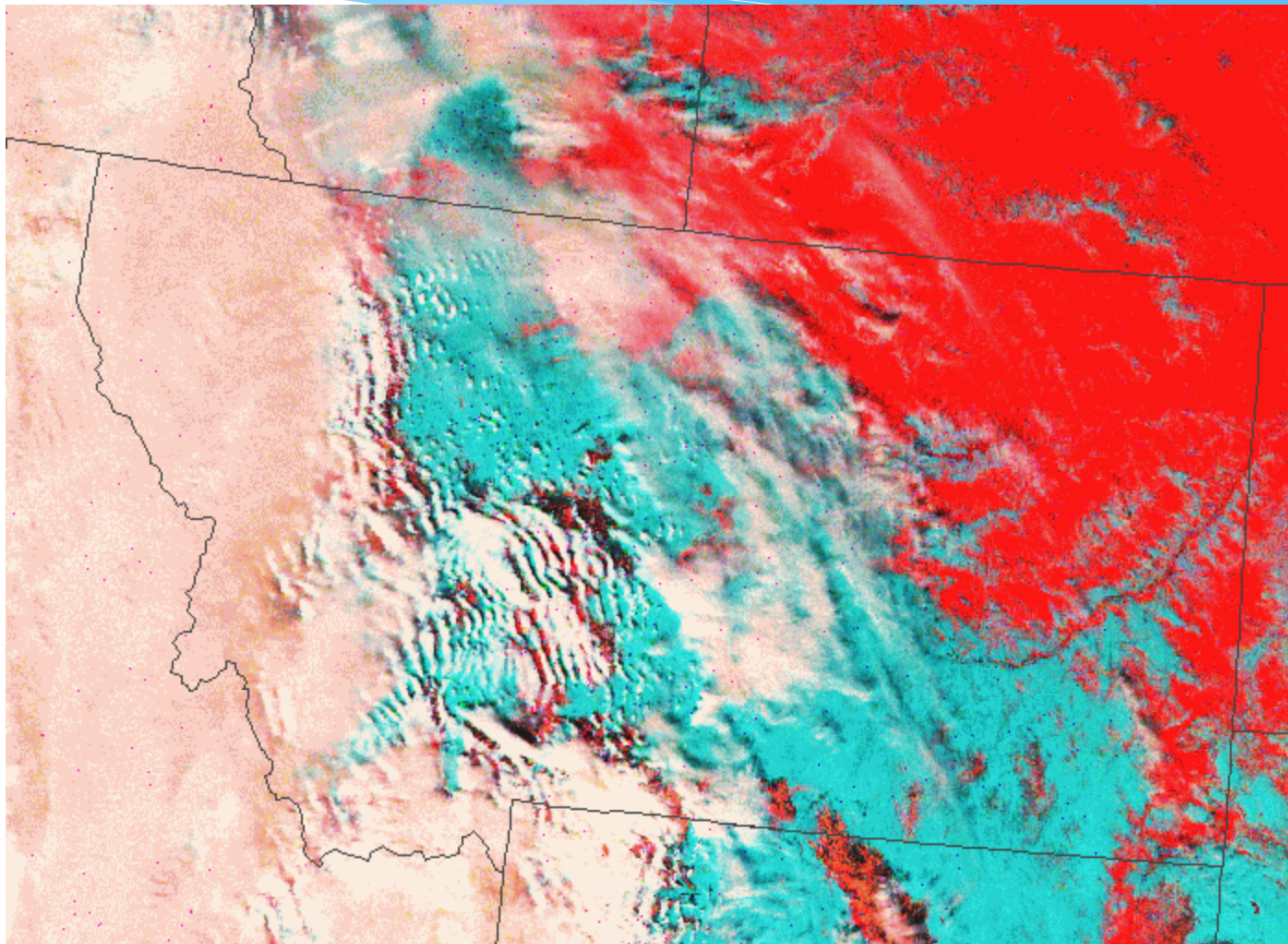
MODIS Satellite – March 12



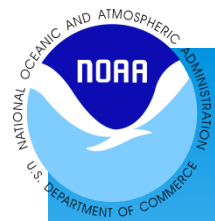
AQUA MODIS False Color 20110312 19:36 UTC



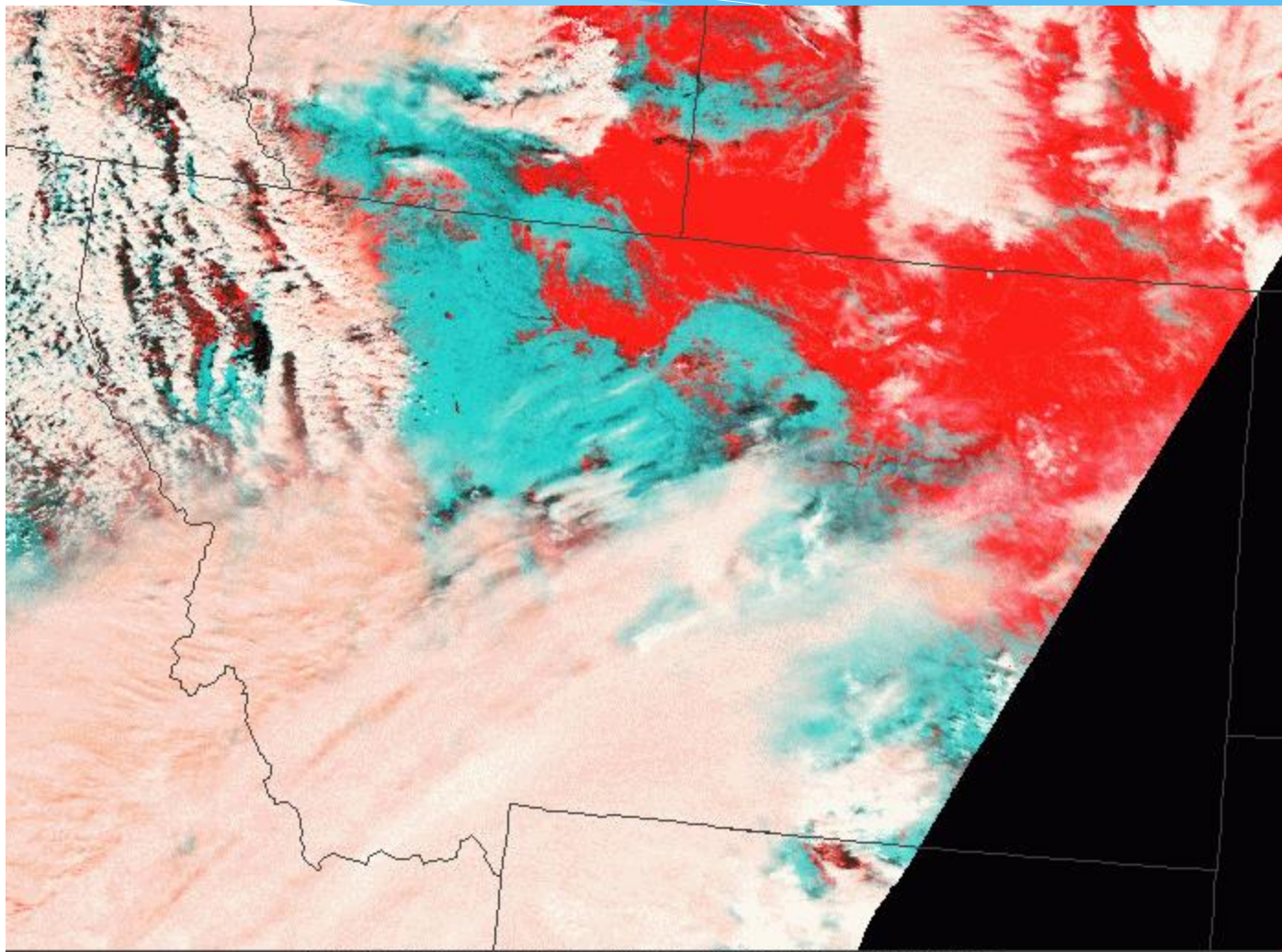
MODIS Satellite – March 15



AQUA MODIS False Color 20110315 20:07 UTC

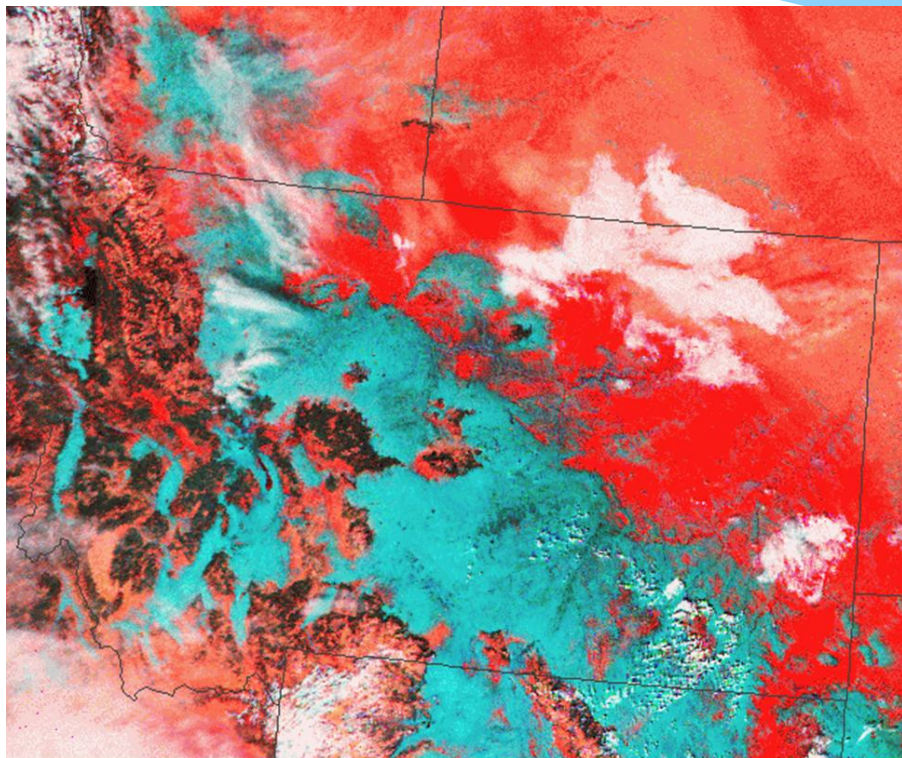


MODIS Satellite – March 16

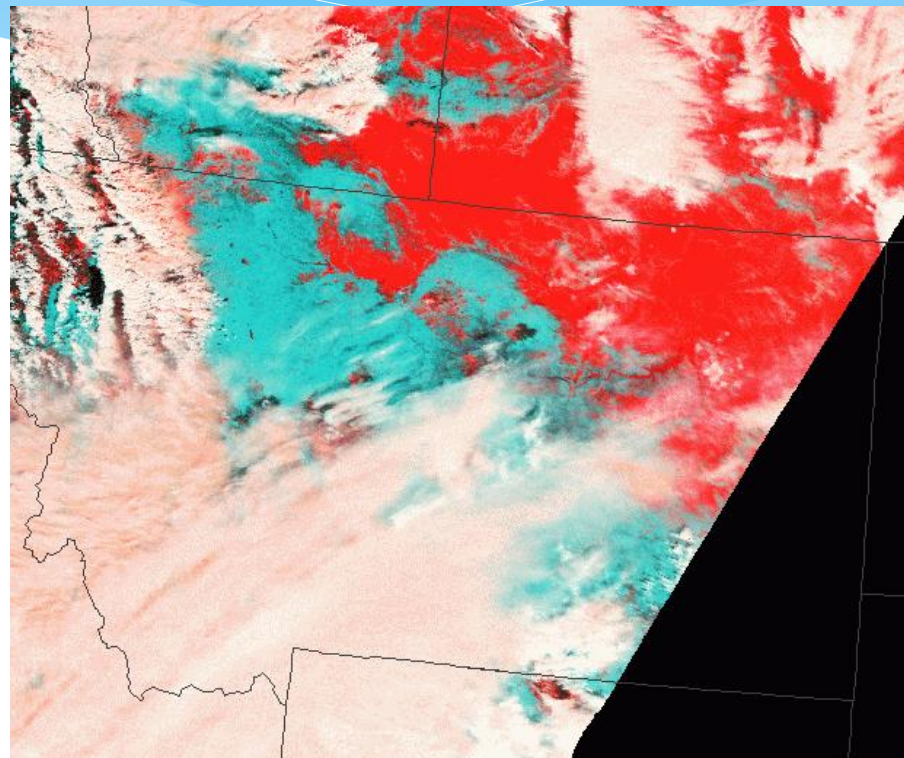


TERRA MODIS False Color 20110316 19:08 UTC

March 12 vs March 16



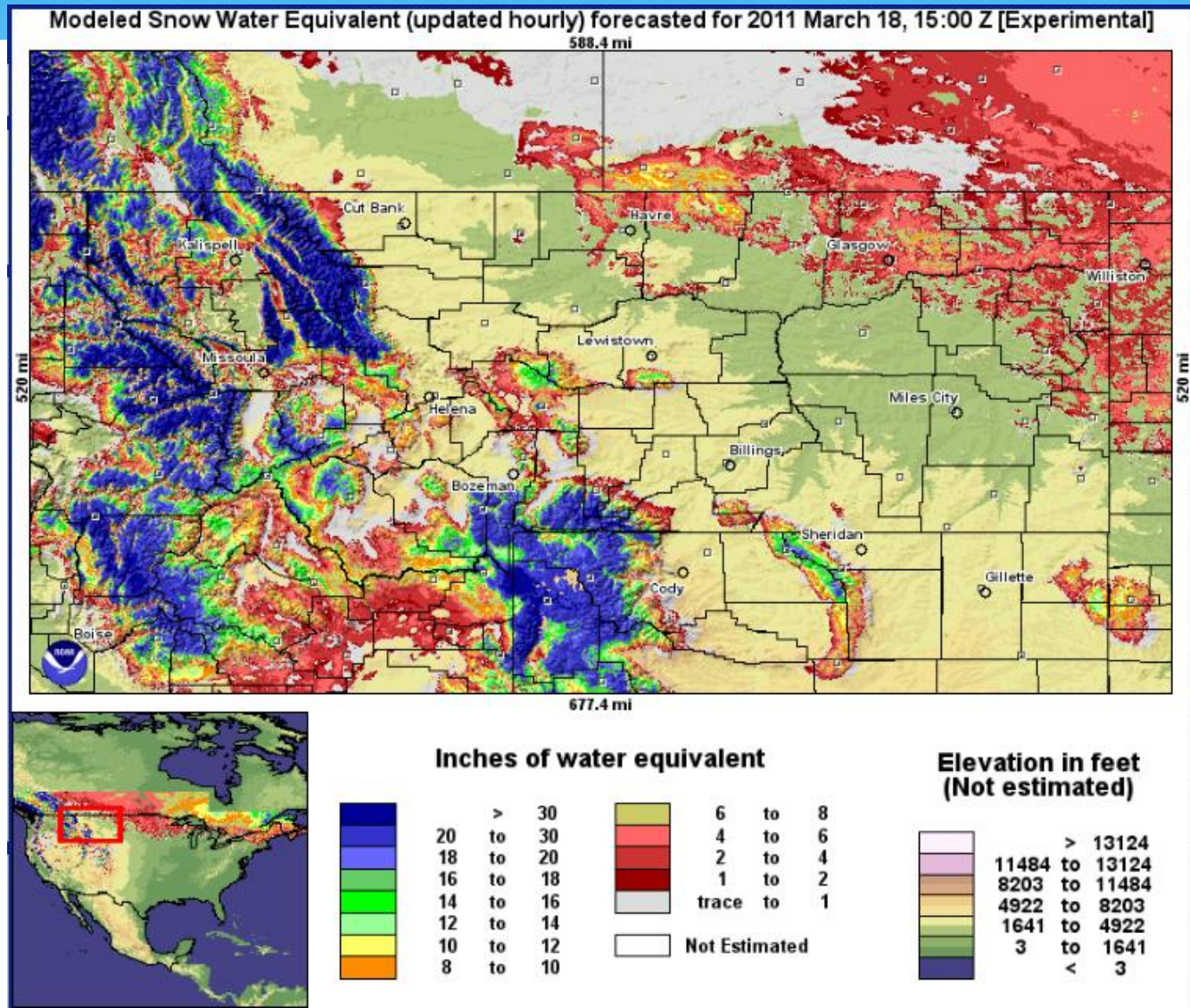
AQUA MODIS False Color 20110312 19:36 UTC



TERRA MODIS False Color 20110316 19:08 UTC

Modeled Snow Water Equivalent

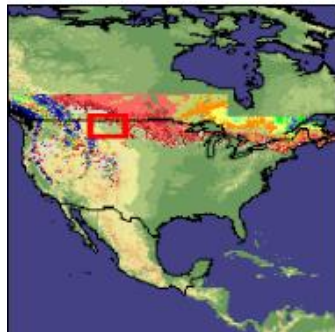
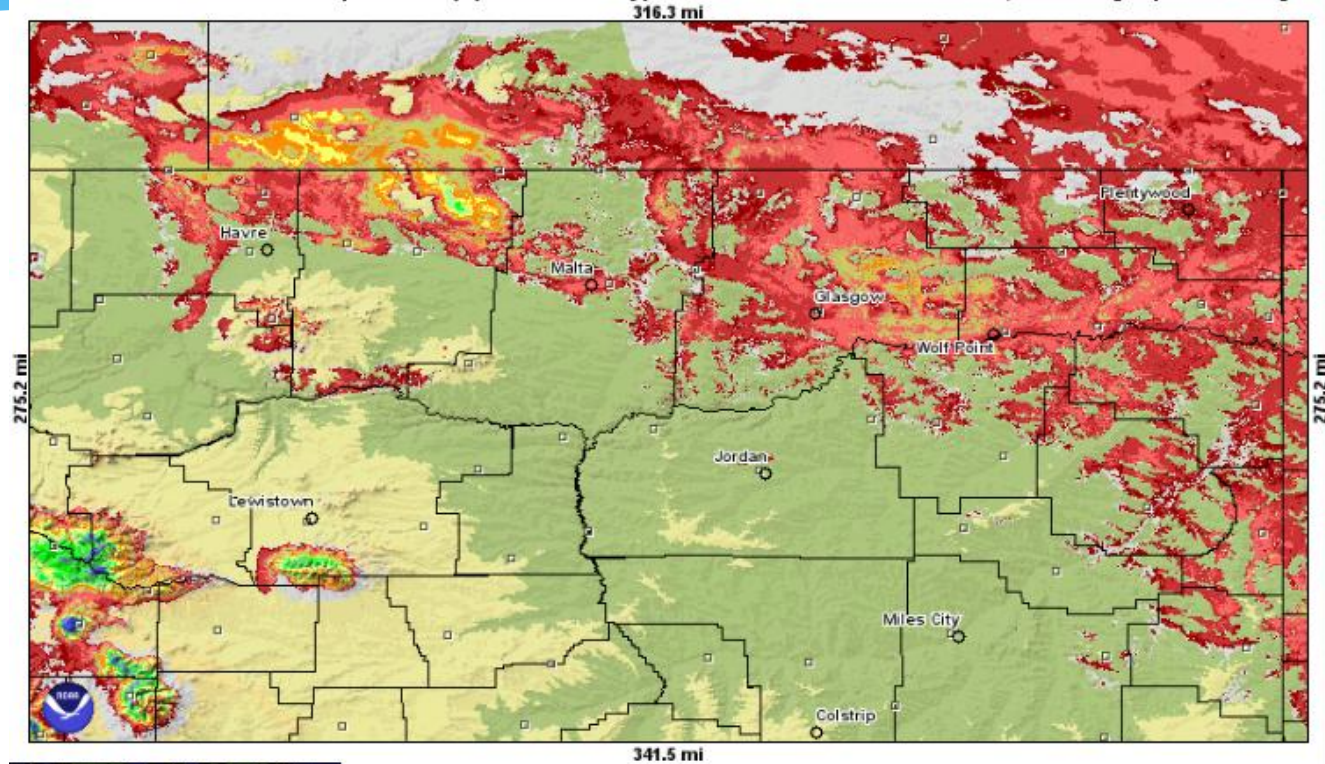
March 18, 2011



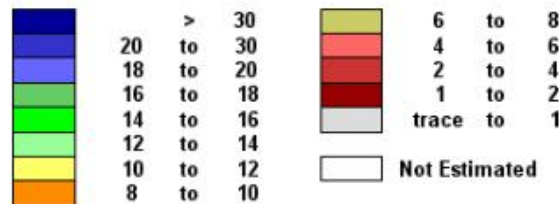
Modeled Snow Water Equivalent

March 18, 2011

Modeled Snow Water Equivalent (updated hourly) forecasted for 2011 March 18, 15:00 Z [Experimental]



Inches of water equivalent



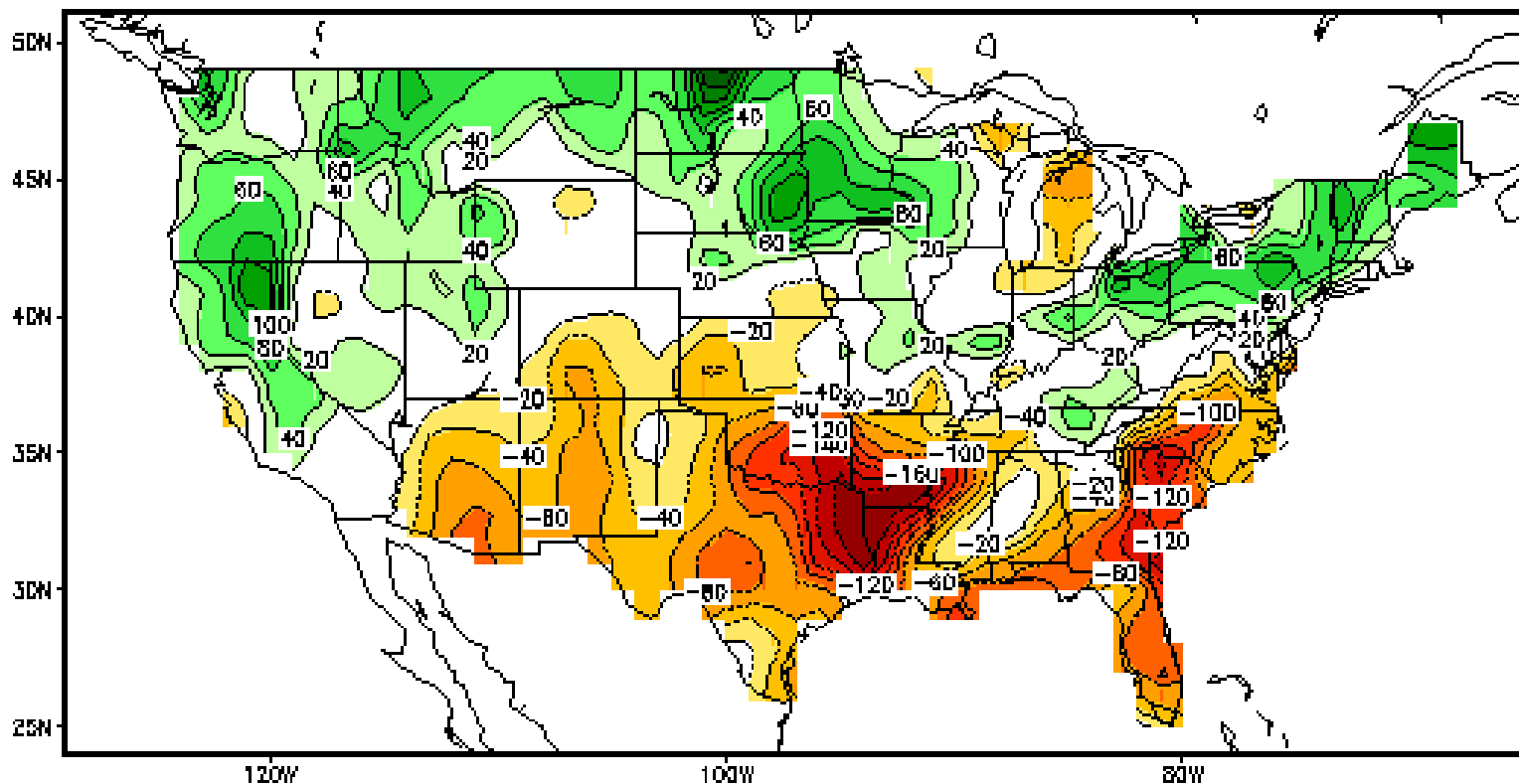
Elevation in feet
(Not estimated)



Soil Moisture Anomaly

March 16, 2011

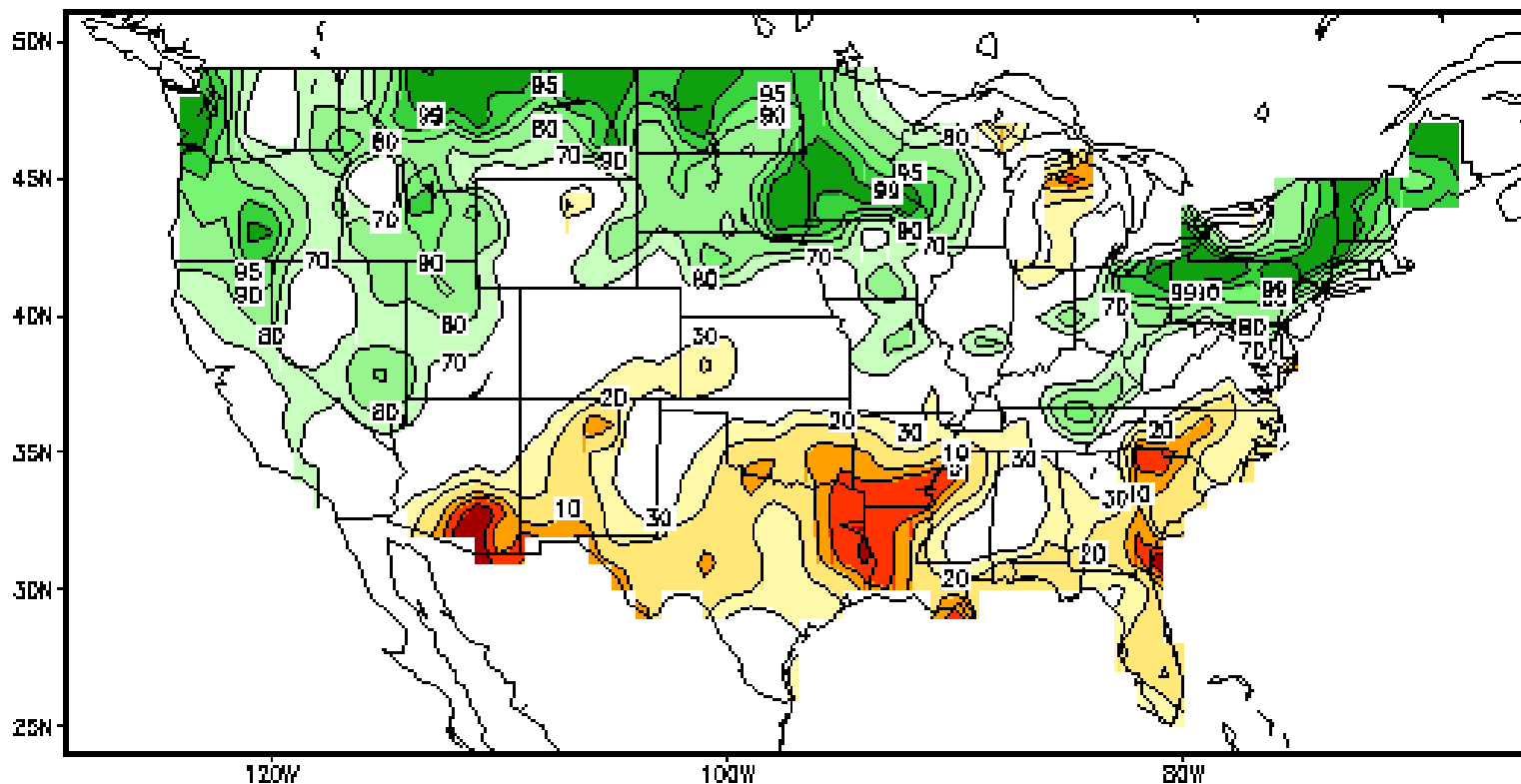
Calculated Soil Moisture Anomaly (mm)
MAR 16, 2011



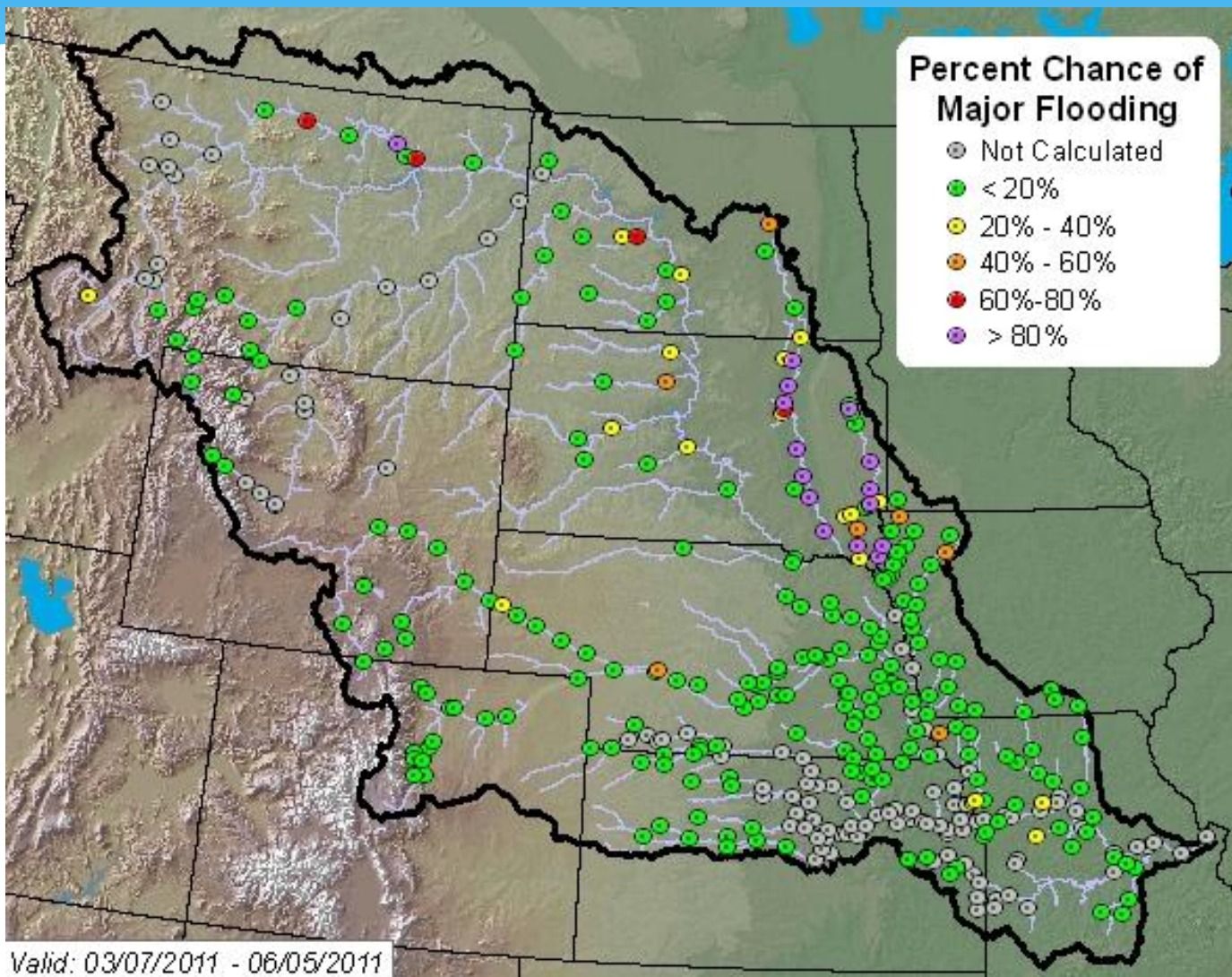
Soil Moisture Percentile

March 16, 2011

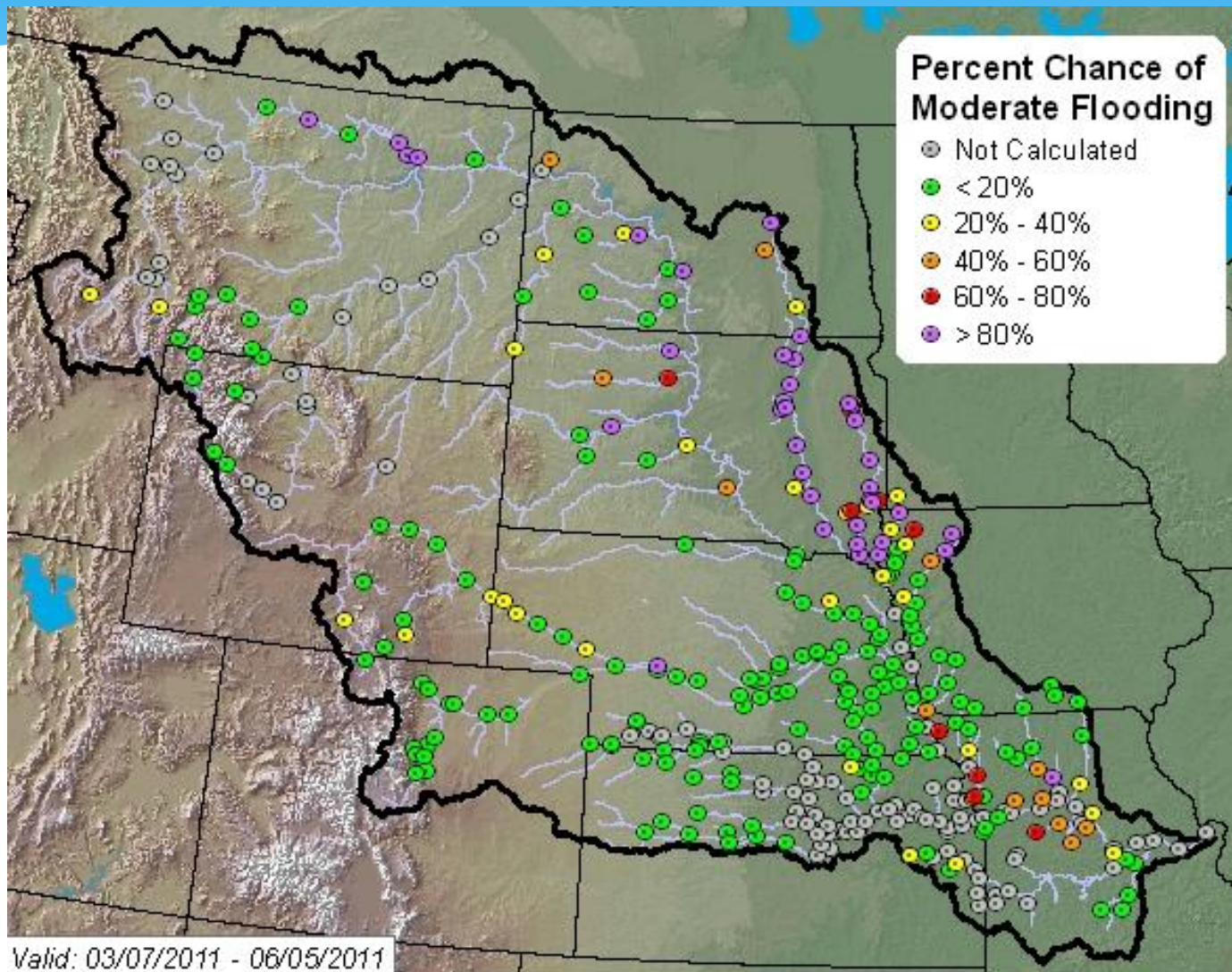
Calculated Soil Moisture Ranking Percentile
MAR 16, 2011



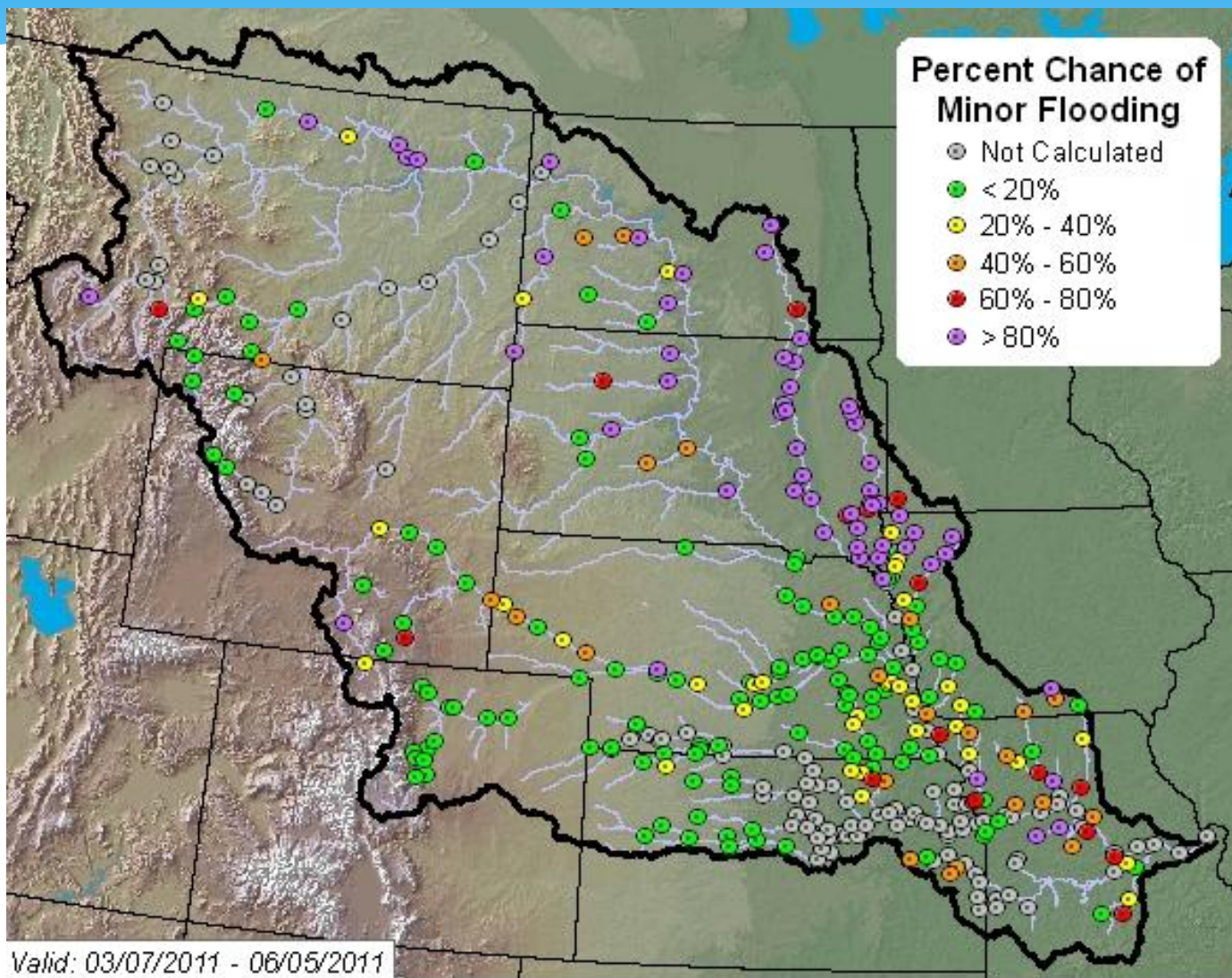
Chance of Major Flooding East of the Divide



Chance of Moderate Flooding East of the Divide

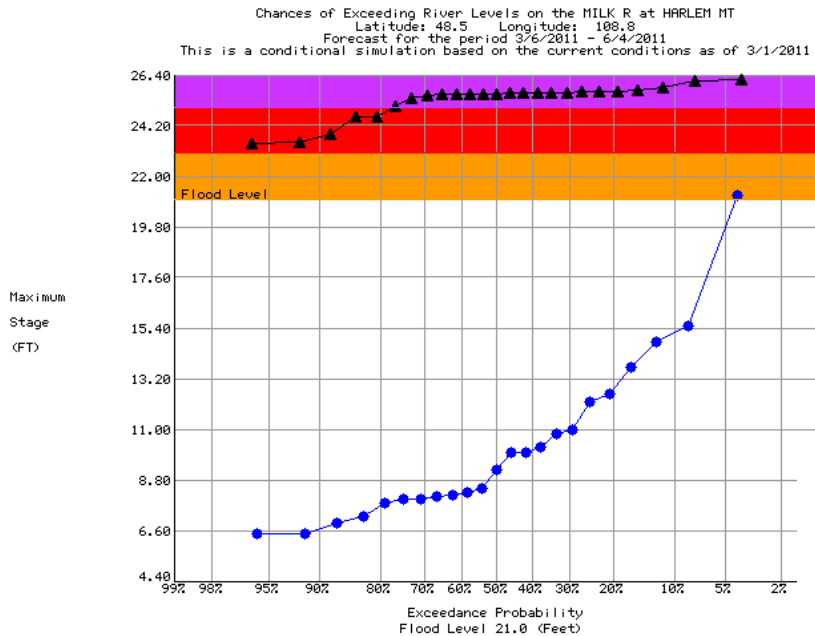


Chance of Minor Flooding East of the Divide

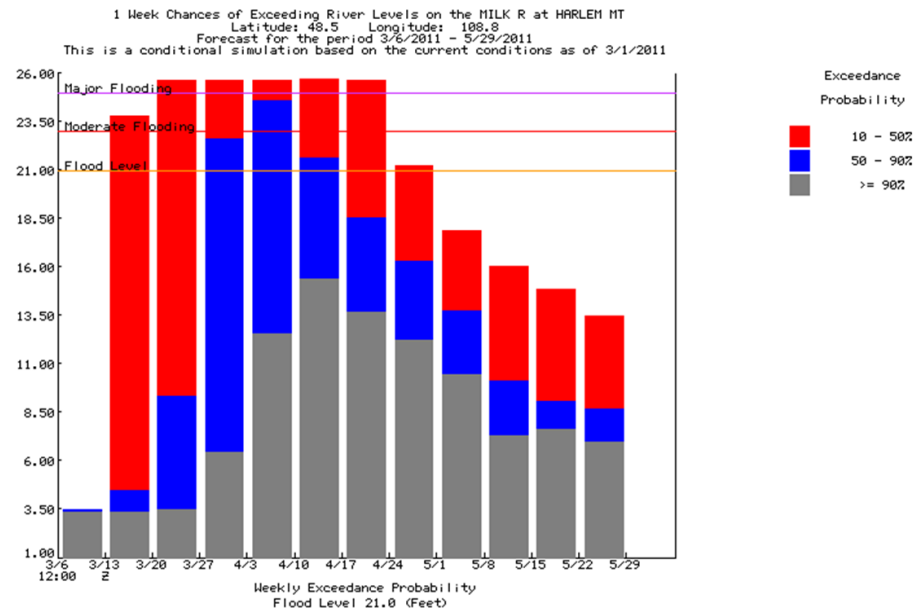


Chance of Exceeding Levels – Harlem

March 1, 2011



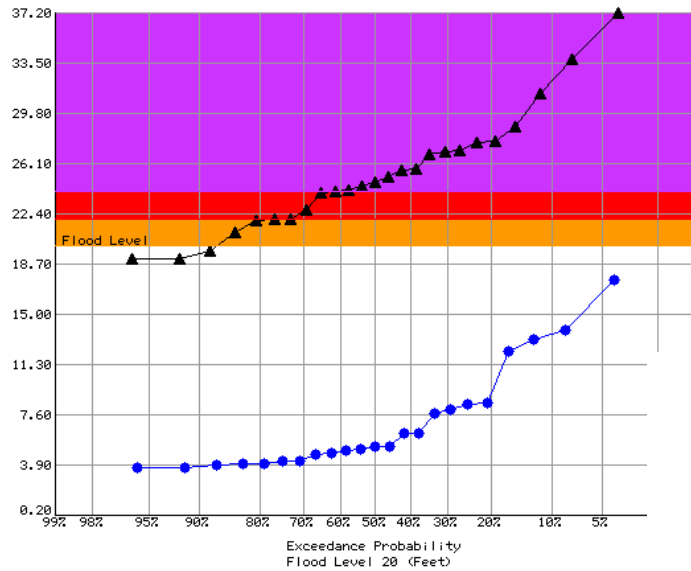
Weekly
Maximum
Stage
(FT)



Chance of Exceeding Levels – Saco

March 1, 2011

Chances of Exceeding River Levels on the MILK R at SACO MT
Latitude: 48.5 Longitude: 107.2
Forecast for the period 3/6/2011 - 6/4/2011
This is a conditional simulation based on the current conditions as of 3/1/2011



Major Flooding
Above 24.0 Feet.

Moderate Flooding
22.0-24.0 Feet.

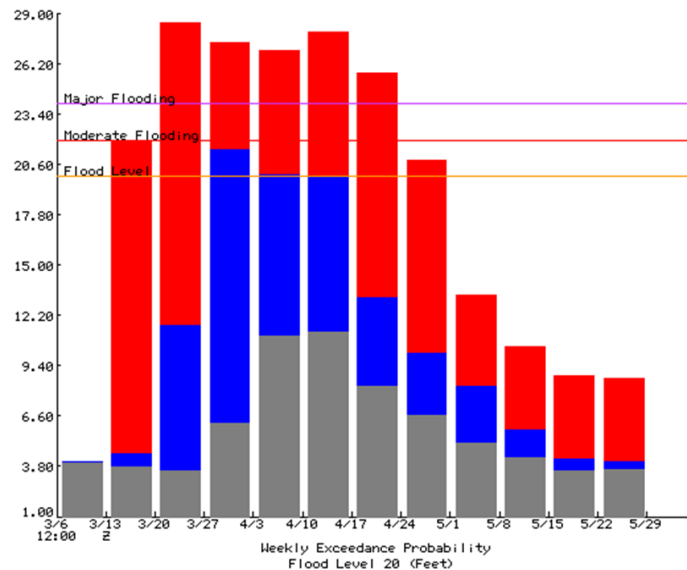
Minor Flooding
20.0-22.0 Feet.

▲ CS

● HS

Weekly
Maximum
Stage
(FT)

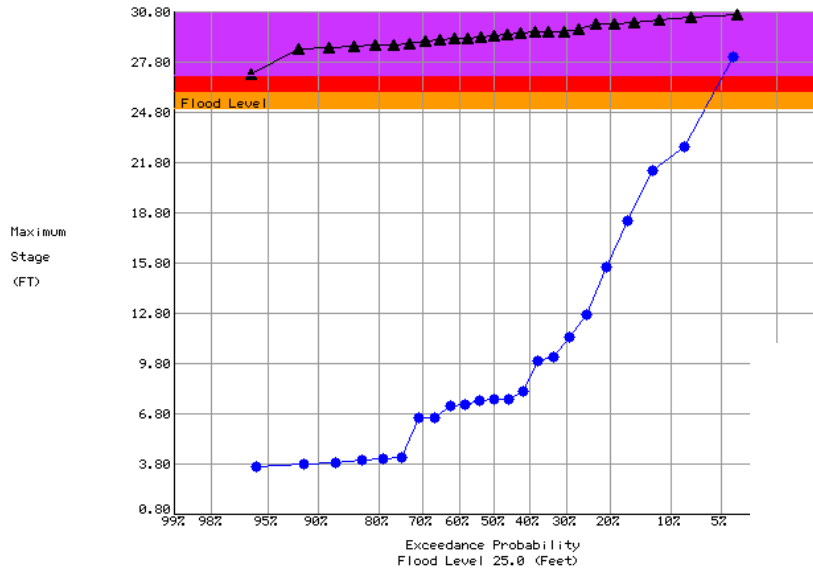
1 Week Chances of Exceeding River Levels on the MILK R at SACO MT
Latitude: 48.5 Longitude: 107.2
Forecast for the period 3/6/2011 - 5/29/2011
This is a conditional simulation based on the current conditions as of 3/1/2011



Chance of Exceeding Levels – Tampico

March 1, 2011

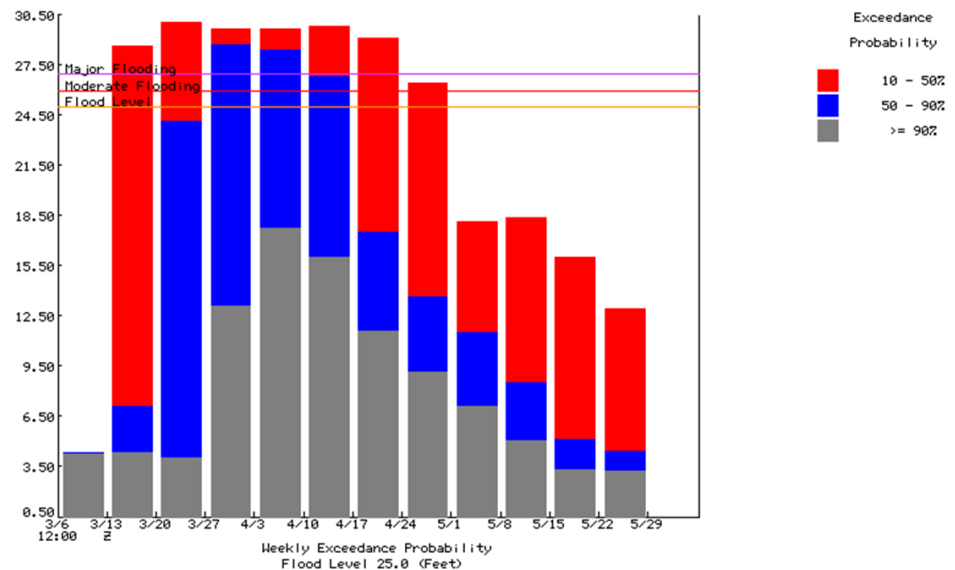
Chances of Exceeding River Levels on the MILK R -91 at TAMPICO MT \$
Latitude: 48.3 Longitude: 106.8
Forecast for the period 3/6/2011 - 6/4/2011
This is a conditional simulation based on the current conditions as of 3/1/2011



Major Flooding
Above 27.0 Feet.
Moderate Flooding
26.0-27.0 Feet.
Minor Flooding
25.0-26.0 Feet.



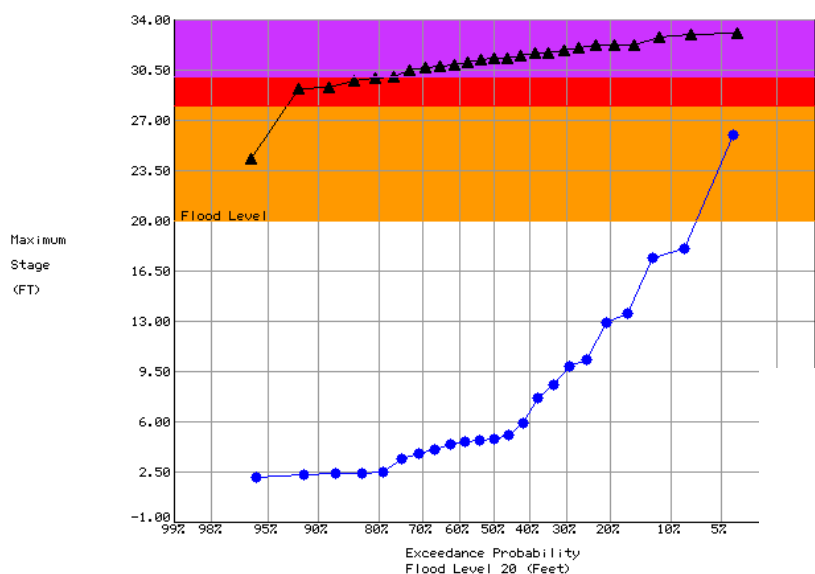
1 Week Chances of Exceeding River Levels on the MILK R -91 at TAMPICO MT \$
Latitude: 48.3 Longitude: 106.8
Forecast for the period 3/6/2011 - 5/29/2011
This is a conditional simulation based on the current conditions as of 3/1/2011



Chance of Exceeding Levels – Nashua

March 1, 2011

Chances of Exceeding River Levels on the MILK R at NASHUA MT
Latitude: 48.1 Longitude: 106.4
Forecast for the period 3/6/2011 – 6/4/2011
This is a conditional simulation based on the current conditions as of 3/1/2011

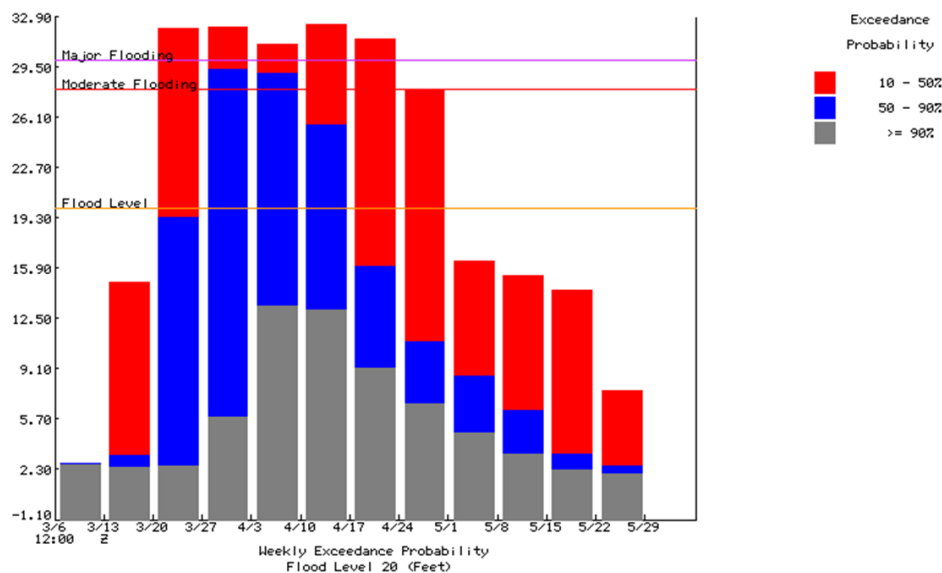


Major Flooding
Above 30.0 Feet.
Moderate Flooding
28.0-30.0 Feet.
Minor Flooding
20.0-28.0 Feet.

CS
HS

Weekly
Maximum
Stage
(FT)

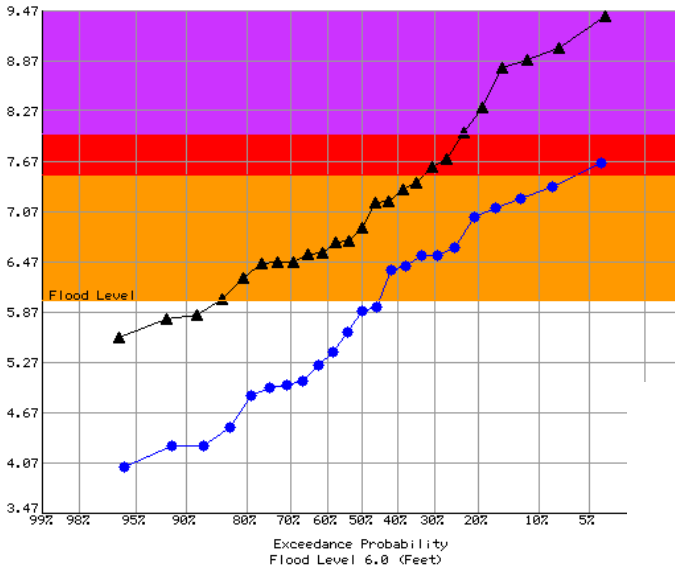
1 Week Chances of Exceeding River Levels on the MILK R at NASHUA MT
Latitude: 48.1 Longitude: 106.4
Forecast for the period 3/6/2011 – 5/29/2011
This is a conditional simulation based on the current conditions as of 3/1/2011



Chance of Exceeding Levels – Melrose

March 1, 2011

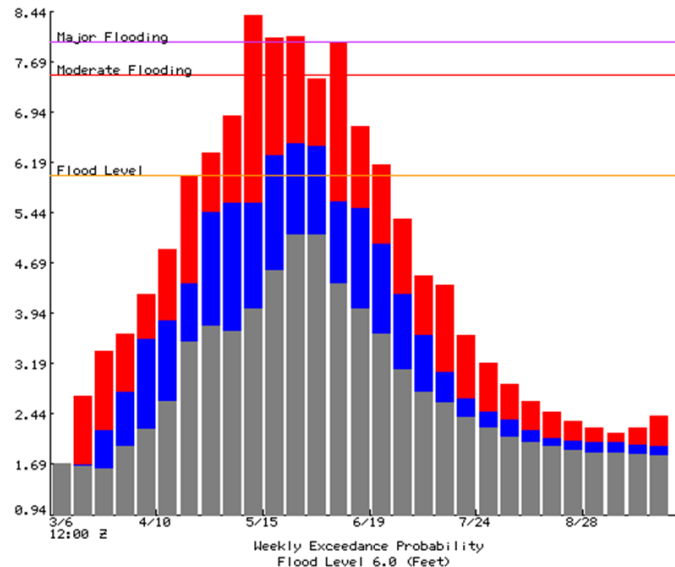
MELROSE MT - BIG HOLE R
Latitude: 45.5 Longitude: 112.7
Forecast for the period 3/6/2011 - 10/1/2011
This is a conditional simulation based on the current conditions as of 3/1/2011



Major Flooding
Above 8.0 Feet.
Moderate Flooding
7.5-8.0 Feet.
Minor Flooding
6.0-7.5 Feet.

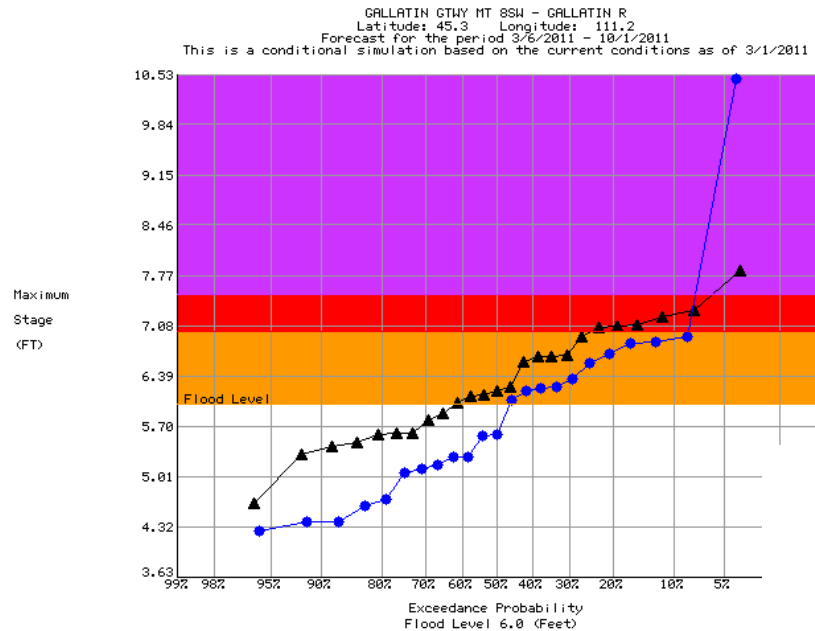
CS
HS

MELROSE MT - BIG HOLE R
Latitude: 45.5 Longitude: 112.7
Forecast for the period 3/6/2011 - 9/25/2011
This is a conditional simulation based on the current conditions as of 3/1/2011



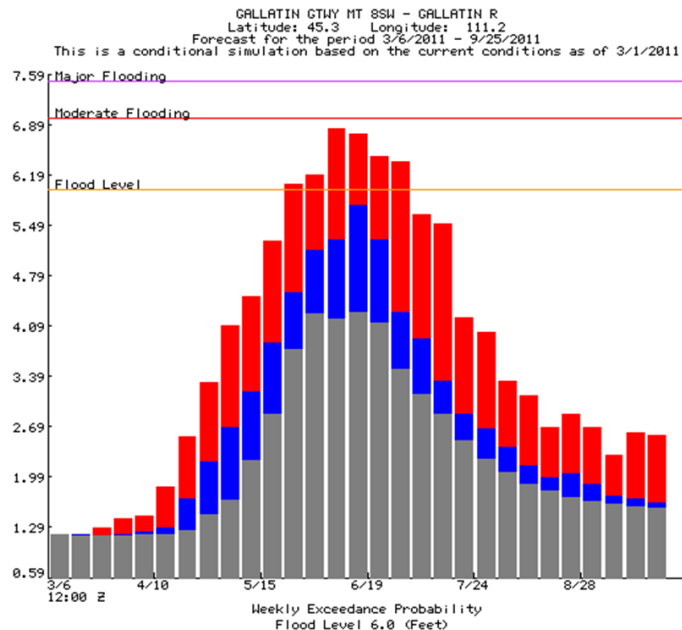
Weekly
Maximum
Stage
(FT)

Chance of Exceeding Levels – Gallatin Gateway - March 1, 2011



Major Flooding
Above 7.5 Feet.
Moderate Flooding
7.0-7.5 Feet.
Minor Flooding
6.0-7.0 Feet.

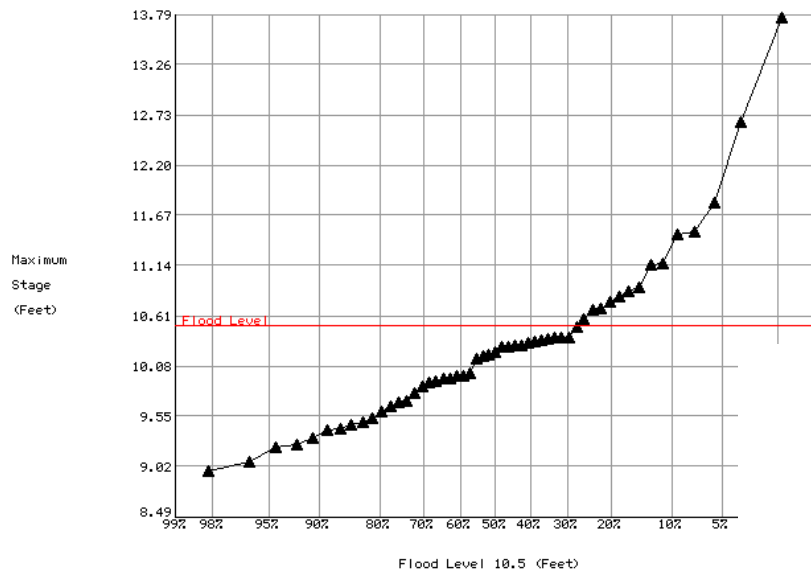
Weekly
Maximum
Stage
(FT)



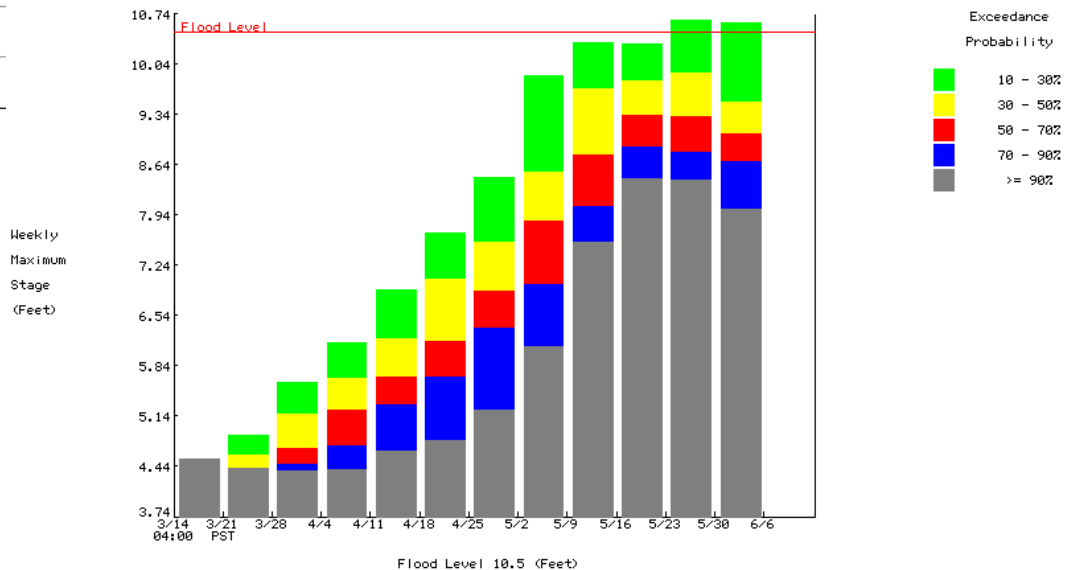
Chance of Exceeding Levels – Flathead

March 14, 2011

Chances of Exceeding River Levels on the FLATHEAD RIVER at AT FLATHEAD, BC
Latitude: 49.0 Longitude: -114.5
Forecast for the period 3/14/2011 – 6/11/2011
This is a conditional simulation based on the current conditions as of 3/14/2011

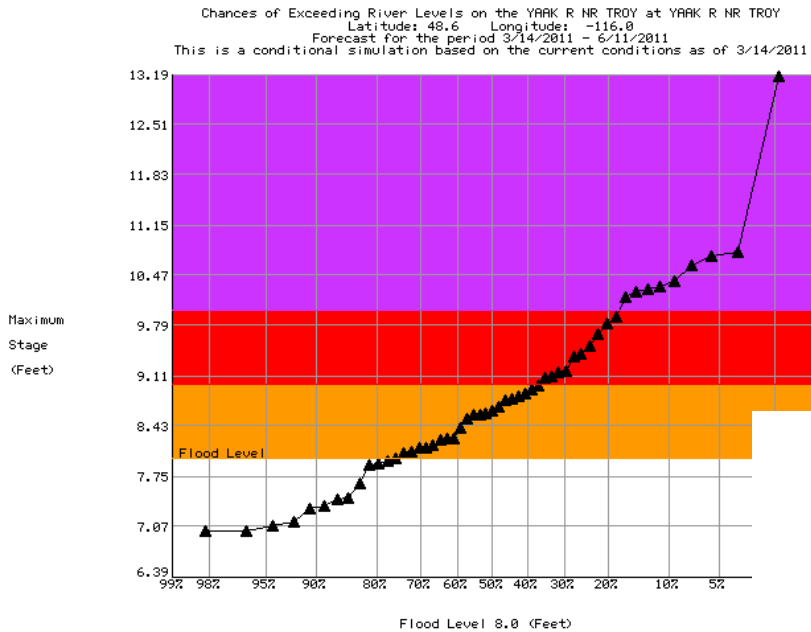


1 Week Chances of Exceeding River Levels on the FLATHEAD RIVER at AT FLATHEAD, BC
Latitude: 49.0 Longitude: -114.5
Forecast for the period 3/14/2011 – 6/6/2011
This is a conditional simulation based on the current conditions as of 3/14/2011



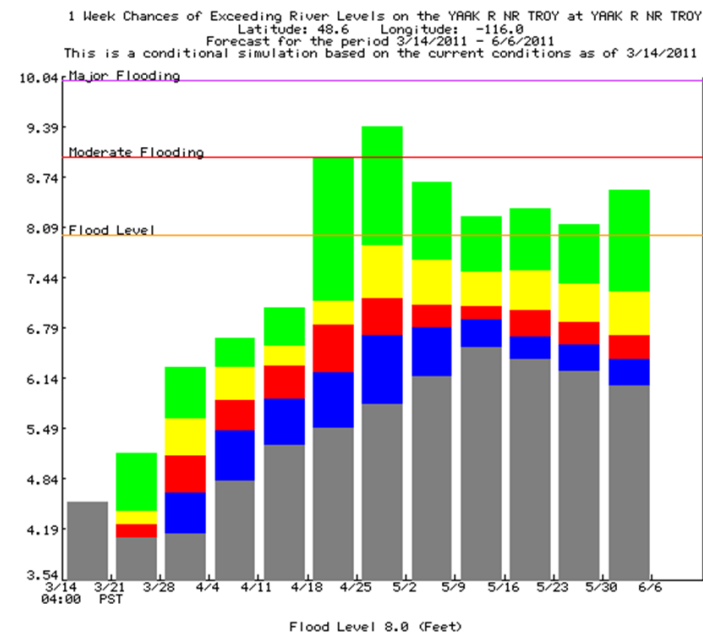
Chance of Exceeding Levels – Troy

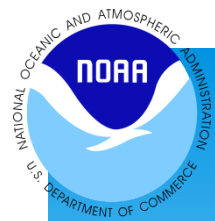
March 14, 2011



- Major Flooding
Above 10.0 Feet.
- Moderate Flooding
9.0-10.0 Feet.
- Minor Flooding
8.0-9.0 Feet.

Weekly
Maximum
Stage
(Feet)





US Bureau of Reclamation Fresno Reservoir

FLOOD
2592.9

ACTIVE
2575.0

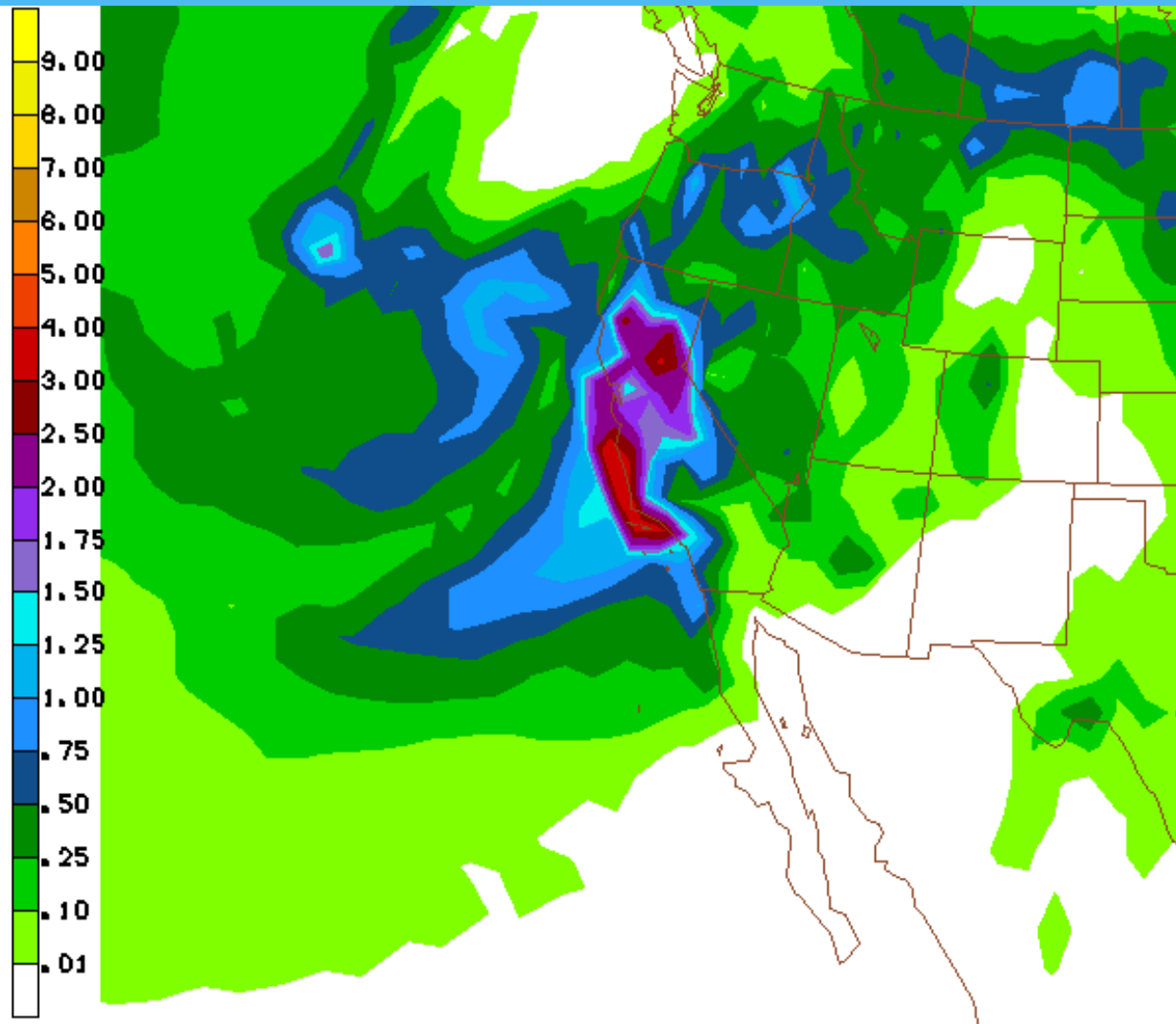
2/24/2011

- * Pool Elevation - 2569 Feet
- * Storage - 68,818 Acre-feet
- * Inflow - 297 CFS
- * Outflow - 90 CFS
- * Active Conservation Pool - 74%
- * Flood Control Pool - 0%
- * Milk River Flow - 90 CFS

3/16/2011

- * Pool Elevation is 2568 Feet
- * Storage is 62,606 Acre-Feet
- * Inflow - 307 CFS
- * Outflow - 341 CFS
- * Active Conservation Pool - 67 %
- * Flood Control Pool - 0 %
- * Milk River Flow - 341 CFS

60-Hour Precipitation Total Sunday - Tuesday

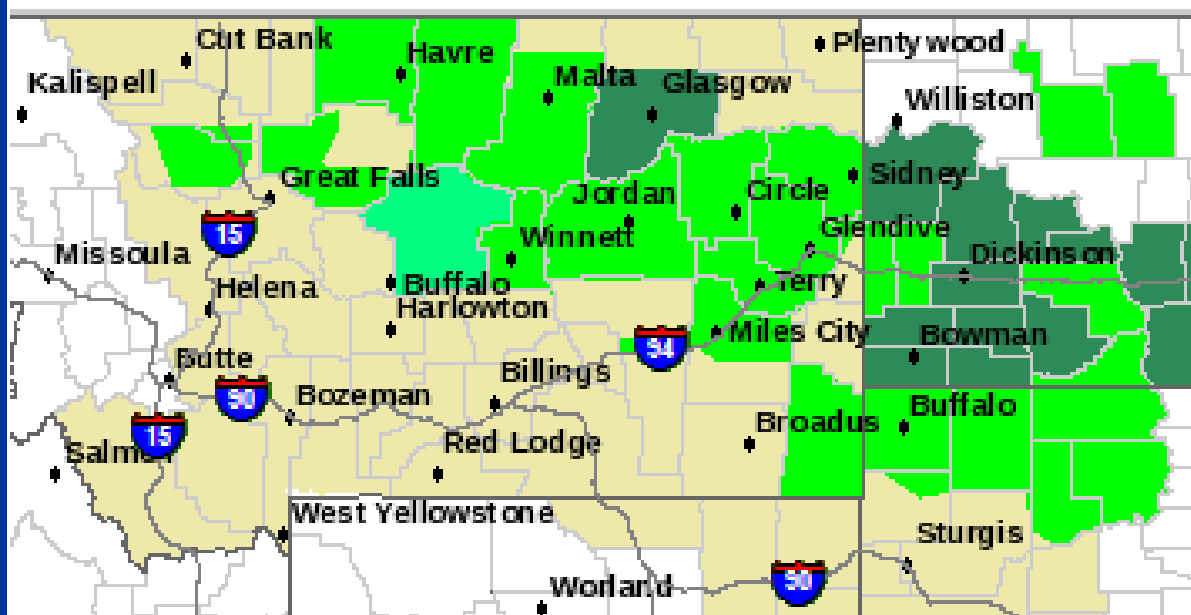


NWS Current Watches/Warnings

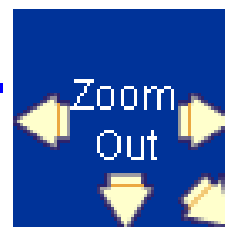
Northeastern Montana Weather

[Map FAQs](#) | [Glossary](#)

Click on the map below for the latest forecast.



Read watches,
warnings &
advisories



Flood Warning



Flood Advisory



Flood Watch



Hazardous Weather
Outlook



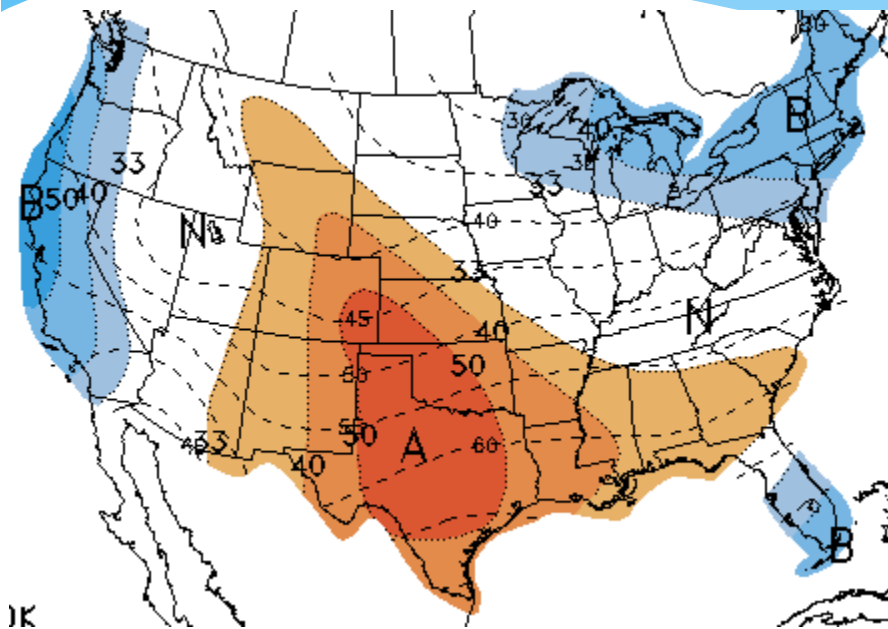
Hydrologic Outlook



Last map update: Mar, 18th 2011 at 3:34:14 pm UTC

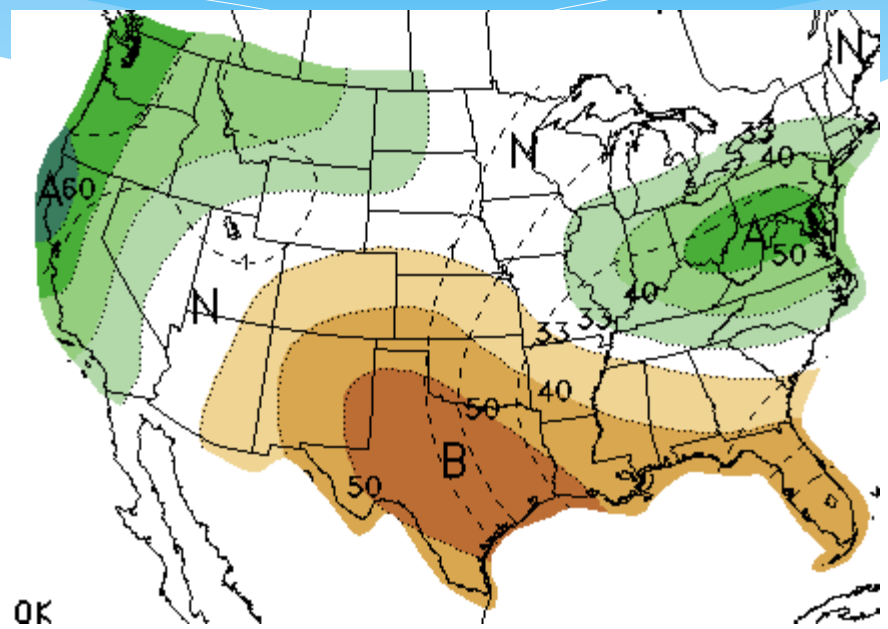
6-10 Day Outlook

March 23-27, 2011



OK

- * 33% to 40% chance temperatures will be above normal over central, south central and southeast Montana

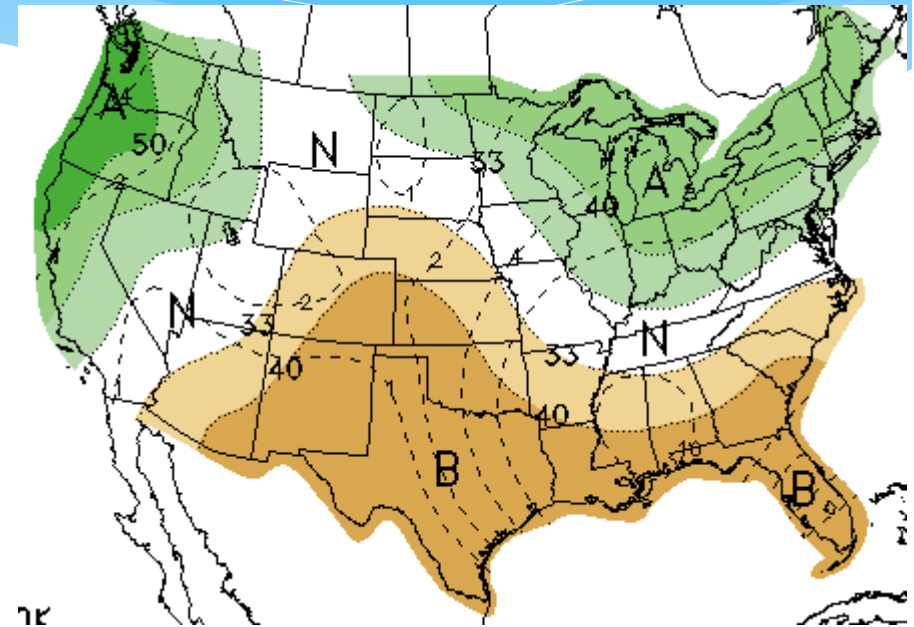
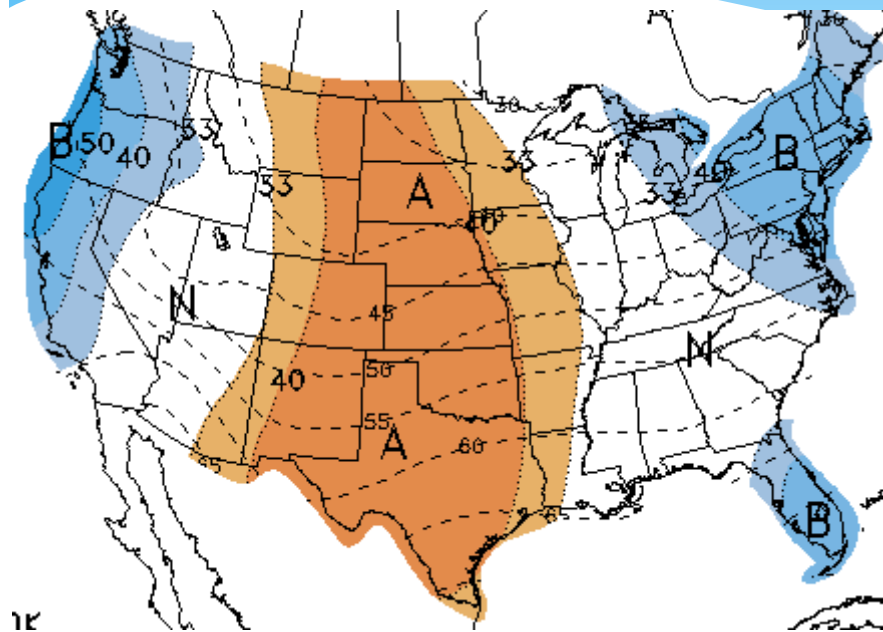


OK

- * 33% to 40% chance precipitation will be above normal south central and east
- * 40% to 50% chance precipitation will be above normal west, central and north central

8-14 Day Outlook

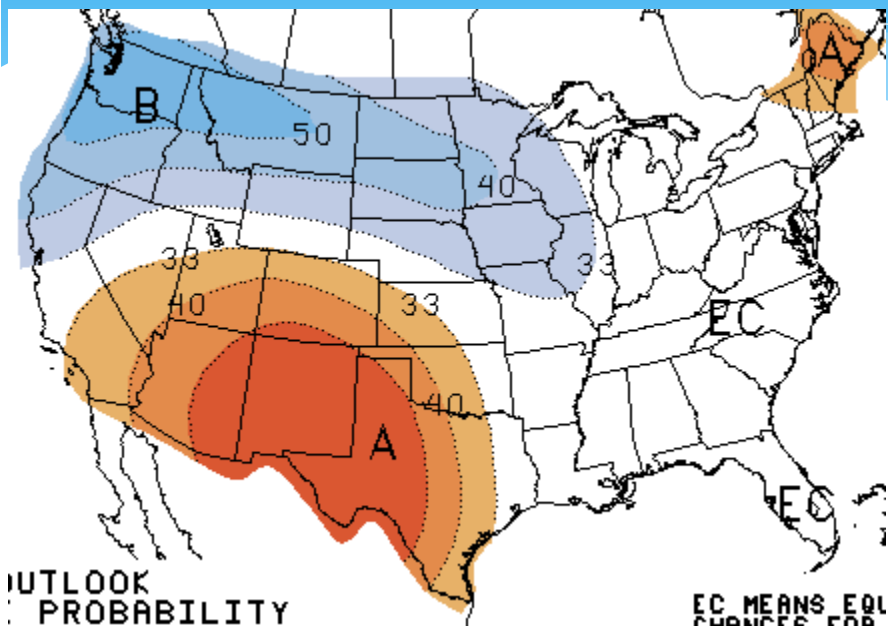
March 25-31, 2011



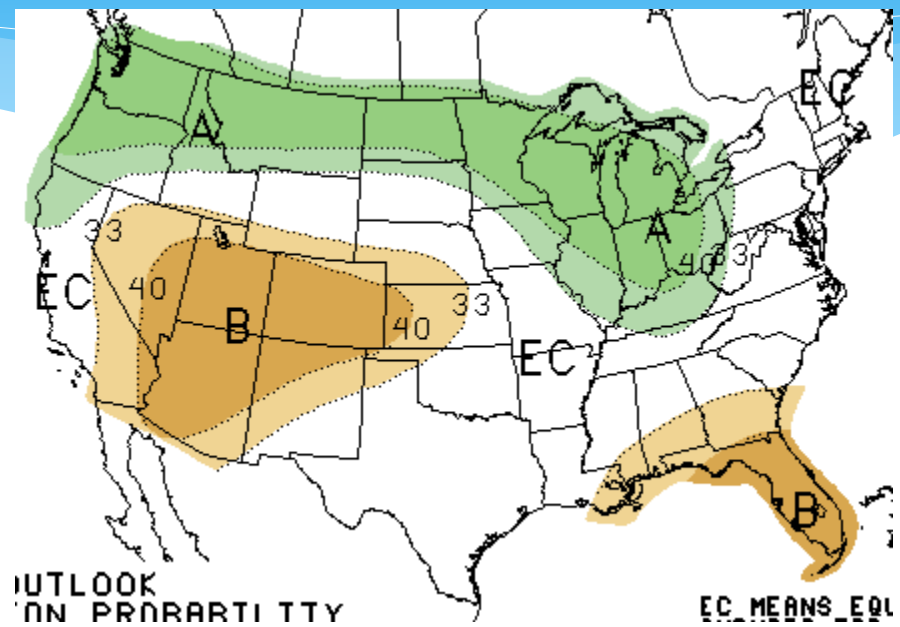
* 33% to 50% chance temperatures will be above normal central and east

* 33% to 40% chance precipitation will be above normal west

April Outlook

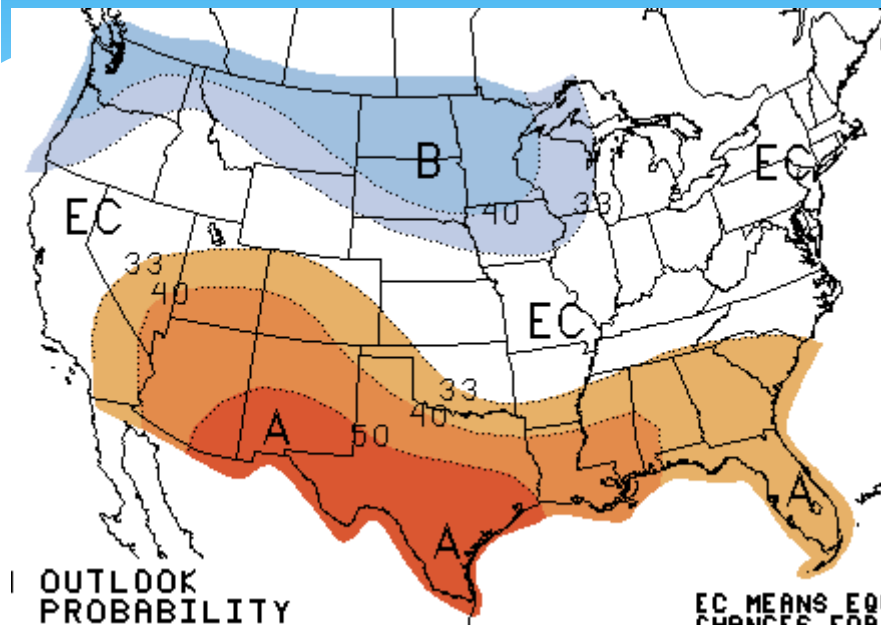


* 40%-60% chance temperatures will be below normal

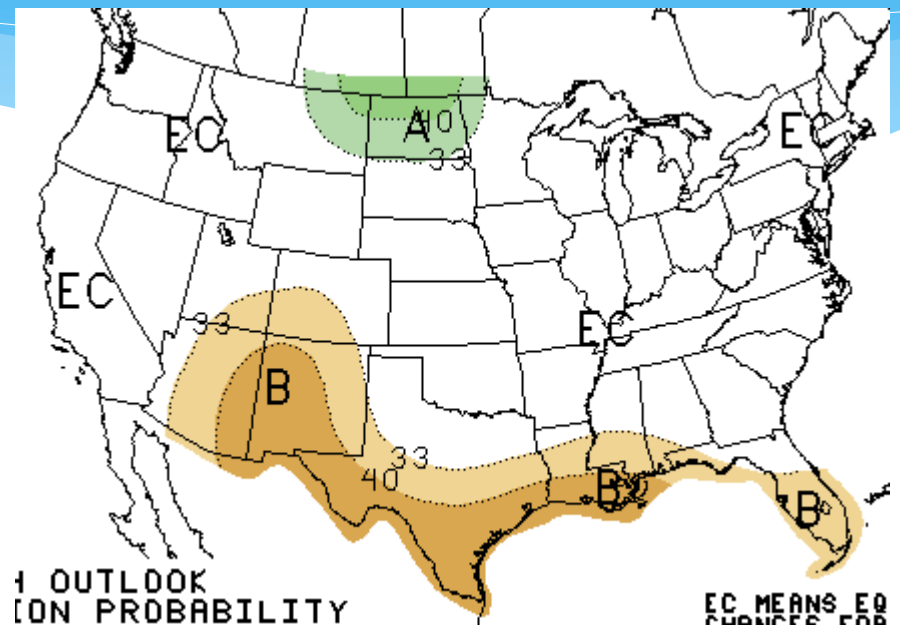


* 33% to 50% chance precipitation will be above normal

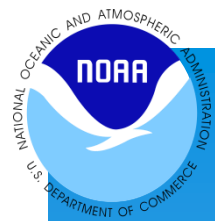
April-June Outlook



* 40%-50% chance temperatures will be below normal



* 33%-40% chance precipitation will be above normal northeast



Questions?

weather.gov/greatfalls

Gina Loss – Service Hydrologist

gina.loss@noaa.gov